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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,157	03/26/2001	Chi-Cheng Ju	P20832	6433

7055 7590 07/27/2005

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EXAMINER	
LEE, RICHARD J	

ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/816,157	JU, CHI-CHENG	
	Examiner	Art Unit	
	Richard Lee	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5 and 27-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 5, 27-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 28, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura of record (5,534,928) in view of Bock et al (6,370,199).

Iwamura discloses an apparatus and method for decoding a plurality of encoded video signals as shown in Figures 1-8, and substantially the same method for reordering a decode order into a display order of an image, the decode order comprising an I-picture, a P-picture, and a B-picture (see Figures 2-8) as claimed in claims 1, 3, 28, and 35, comprising determining a first picture of the compressed picture sequence (see Figure 1 and column 1, lines 26-52, columns 5-6); if the first picture is I-picture, decoding the first picture (see Figure 1) and storing the decoded first picture in a first buffer (i.e., 27a of Figure 1, see column 7, line 52 to column 8, line 15); obtaining a first virtual picture (i.e., *B1 of Figure 3E, see column 9, line 66 to column 10, line 29) in a predetermined manner, sending the first virtual picture to a second buffer (i.e., 27c of Figure 1) for display, wherein the predetermined manner, responsive to a virtual picture parameter, generates the first virtual picture using a decoded picture pre-stored in a third buffer (i.e., B1 is decoded using the I1 picture stored in the third buffer 27b and the P1 picture, see column 9, lines 39-50); determining a second picture (see Figure 1), if the second picture is P-picture (i.e., Po of Figure 3E), decoding the second picture and storing the decoded second picture into a third buffer (i.e., 27b of Figure 1); obtaining a second virtual picture (i.e., B2 of Figure 7E) according to the predetermined manner, sending the second virtual picture to the

second buffer (i.e., 27c of Figure 1) for display, wherein the predetermined manner, responsive to a parameter, generates the second virtual picture using a decoded picture pre-stored in the first buffer (i.e., B2 is decoded using the I1 picture stored in the first buffer and the P1 picture, see column 10, line 65 to column 11, line 18); wherein the virtual picture parameter further comprises a picture coding type, and the picture coding type is P-picture (see Figure 3 and column 1, lines 26-52).

Iwamura does not particularly disclose, though, wherein the virtual picture parameter, generated by the parameter generator without decoding the compressed picture sequence, comprises a first zero-valued motion vector and a first zero-valued coded block pattern, and wherein the parameter, generated by the parameter generator comprises a second zero-valued motion vector and a second zero-valued coded block pattern as claimed in claims 1 and 3. However, Bock et al discloses a method and apparatus for processing compressed video data streams, and teaches the conventional use of zero valued motion vectors and zero valued coded block patterns for null frames (i.e., virtual frames, see column 4, lines 1-14) and generation of the virtual picture parameter without decoding the compressed picture sequence (i.e., any B frame within the video sequence may be replaced with a null B frame (virtual picture parameter), including a B frame in the middle of the video sequence, and as such the virtual picture parameter (null B frame) is generated without decoding the compressed picture sequence as claimed, see column 3, line 59 to column 4, line 14, column 5, lines 17-29). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura and Bock et al references in front of him/her and the general knowledge of parameters used in MPEG format video processings, would have had no difficulty in using the parameter generator for generating a

virtual picture parameter without decoding the compressed picture sequence and comprising zero-valued motion vector and zero valued coded block pattern for virtual pictures as taught by Bock et al in order to obtain the first and second virtual pictures according to the first and second zero valued motion vectors and first and second zero valued coded block patterns within Iwamura for the same well known MPEG format compliance purpose as claimed.

3. Claims 5 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura and Bock et al as applied to claims 1, 3, 28, and 35 in the above, and further in view of Tahara of record (5,473,380).

The combination of Iwamura and Bock et al discloses substantially the same method as above, further including determining a second picture (see Figure 1 of Iwamura), if the second picture is I-picture, decoding the second picture (see column 7, line 28 to column 8, line 15 of Iwamura); obtaining a second virtual picture (i.e., B2 of Figure 7E of Iwamura) according to the predetermined manner, sending the second virtual picture to the second buffer (i.e., 27c of Figure 1 of Iwamura) for display, wherein the predetermined manner, responsive to a parameter, generates the second virtual picture using a decoded picture pre-stored in the first buffer (i.e., B2 is decoded using the I1 picture stored in the first buffer and the P1 picture, see column 10, line 65 to column 11, line 18 of Iwamura), and the parameter generated by the parameter generator, comprises a second zero-valued motion vector and a second zero-valued coded block pattern (i.e., as provided by Bock et al within Iwamura, see column 4, lines 1-14 of Bock et al).

The combination of Iwamura and Bock et al does not particularly disclose, though, storing a decoded second picture into a third buffer as claimed in claim 5. However, Tahara discloses a picture signal transmitting system as shown in Figures 6 and 9, and teaches the

conventional use of a frame memory structure which utilizes a bank changeover feature that has the capability of storing an I frame in either one of the memories (i.e., 63a and 63b of Figure 6 or 86a and 86b of Figure 9, see column 8, lines 30-49, column 10, line 48 to column 11, line 55). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, and Tahara references in front of him/her and the general knowledge of memory devices within decoders, would have had no difficulty in providing the bank changeover memory structure of Tahara within the decoder of Iwamura so that the decoded second picture may be stored in a third buffer for the same well known memory sharing purposes as claimed.

4. Claims 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura, Bock et al, and Tahara et al as applied to claims 1, 3, 5, 28, 35, and 41 in the above, and further in view of Panusopone et al (6,647,061).

The combination of Iwamura, Bock et al, and Tahara discloses substantially the same method as above, but does not particularly disclose wherein the virtual picture parameter further comprises a scale factor so that the width and height of the second virtual picture is different from the second picture and wherein a macroblock in the second virtual picture is a skipped macroblock as claimed in claims 40 and 42. However, Panusopone et al discloses a video size conversion and transcoding of MPEG-2 to MPEG-4 as shown in Figure 5, and teaches the conventional scaling of pictures (i.e., 540, 545 of Figure 5B, and see column 18, lines 36-65) and skipping of macroblocks (see column 14, lines 25-26, column 15, lines 9-10). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, Tahara, and Panusopone et al front of him/her and the general knowledge of the scaling of pictures and skipping of macroblocks within MPEG codings, would have had no difficulty in

providing the scale factor and skipping of macroblocks as taught by Panusopone et al within Iwamura so as to provide a different width and height for the second virtual picture and wherein a macroblock in the second virtual picture is a skipped macroblock for the same well known MPEG compliant video processing purposes as claimed.

5. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura, Bock et al, and Tahara et al as applied to claims 1, 3, 5, 28, 35, and 41 in the above, and further in view of Suzuki et al (6,381,373).

The combination of Iwamura, Bock et al, and Tahara discloses substantially the same method as above, further including wherein the second virtual picture is a virtual field/frame picture (i.e., B2 of Figure 7E, and column 1, lines 26-36 of Iwamura).

The combination of Iwamura, Bock et al, and Tahara does not particularly disclose, though, a prediction mode frame motion type parameter in the virtual frame picture is generated as "frame based" and a prediction mode field motion type parameter in the virtual field picture is generated as "field based" as claimed in claims 43 and 44. However, Suzuki et al discloses an apparatus and method for reducing quantization error in digital image signals as shown in Figure 17, and teaches the conventional use of frame based and field based prediction mode motion type parameters (see column 13, lines 8-40, column 16, lines 9-23). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, Tahara, and Suzuki et al references in front of him/her and the general knowledge of prediction parameter indications within MPEG video processings, would have had no difficulty in providing the frame based and field based prediction mode motion type parameters as taught by Suzuki et al for indicating

either field or frame second virtual pictures within Iwamura for the same well known MPEG compliant video processing purposes as claimed.

6. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura, Bock et al, Tahara et al, and Suzuki et al as applied to claims 1, 3, 5, 28, 35, 41, 43, and 44 in the above, and further in view of Panusopone et al (6,647,061).

The combination of Iwamura, Bock et al, Tahara, and Suzuki et al discloses substantially the same method as above, but does not particularly disclose wherein the virtual field picture comprises a prediction made from a field of a same parity as claimed in claim 45. Such technical features are well known and made obvious by Panusopone et al (see column 15, lines 17-37). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, Tahara, Suzuki et al, and Panusopone et al references in front of him/her and the general knowledge of motion estimations, would have had no difficulty in providing the same parity field predictions as taught by Panusopone et al for the virtual field picture within the combination of Iwamura, Bock et al, Tahara, and Suzuki et al for the same well known MPEG compliant video processing purposes as claimed.

7. Claims 27, 29, 34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura and Bock et al as applied to claims 1, 3, 28, and 35 in the above, and further in view of Panusopone et al (6,647,061).

The combination of Iwamura and Bock et al discloses substantially the same method as above, but does not particularly disclose wherein the virtual picture parameter further comprises a scale factor so that the width and height of the first virtual picture is different from the first picture, wherein the virtual picture parameter further comprises a scale factor so that the width

and height of the second virtual picture is different from the second picture, wherein a macroblock in the first virtual picture is a skipped macroblock, and a macroblock in the second virtual picture is a skipped macroblock as claimed in claims 27, 29, 34, and 36. However, Panusopone et al discloses a video size conversion and transcoding of MPEG-2 to MPEG-4 as shown in Figure 5, and teaches the conventional scaling of pictures (i.e., 540, 545 of Figure 5B, and see column 18, lines 36-65) and skipping of macroblocks (see column 14, lines 25-26, column 15, lines 9-10). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, and Panusopone et al front of him/her and the general knowledge of the scaling of pictures and skipping of macroblocks within MPEG codings, would have had no difficulty in providing the scale factor and skipping of macroblocks as taught by Panusopone et al within Iwamura so as to provide a different width and height for the first and second virtual pictures and wherein a macroblock in the first and second virtual pictures is a skipped macroblock for the same well known MPEG compliant video processing purposes as claimed.

8. Claims 30, 31, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura and Bock et al as applied to claims 1, 3, 28, and 35 in the above, and further in view of Suzuki et al (6,381,373).

The combination of Iwamura and Bock et al discloses substantially the same method as above, further including wherein the first virtual picture is a virtual field/frame picture (i.e., *B1 of Figure 3E, see column 1, lines 26-36, column 9, line 66 to column 10, line 29 of Iwamura) and the second virtual picture is a virtual field/frame picture (i.e., B2 of Figure 7E, and see column 1, lines 26-36 of Iwamura).

The combination of Iwamura and Bock et al does not particularly disclose, though, a prediction mode frame motion type parameter in the virtual frame picture is generated as "frame based" and a prediction mode field motion type parameter in the virtual field picture is generated as "field based" as claimed in claims 30, 31, 37, and 38. However, Suzuki et al discloses an apparatus and method for reducing quantization error in digital image signals as shown in Figure 17, and teaches the conventional use of frame based and field based prediction mode motion type parameters (see column 13, lines 8-40, column 16, lines 9-23). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, and Suzuki et al references in front of him/her and the general knowledge of prediction parameter indications within MPEG video processings, would have had no difficulty in providing the frame based and field based prediction mode motion type parameters as taught by Suzuki et al for indicating either field or frame first and second virtual pictures within Iwamura for the same well known MPEG compliant video processing purposes as claimed.

9. Claims 32 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura, Bock et al, and Suzuki et al as applied to claims 1, 3, 28, 30, 31, 35, 37, and 38 in the above, and further in view of Panusopone et al (6,647,061).

The combination of Iwamura, Bock et al, and Suzuki et al discloses substantially the same method as above, but does not particularly disclose wherein the virtual field picture comprises a prediction made from a field of a same parity as claimed in claims 32 and 39. Such technical features are well known and made obvious by Panusopone et al (see column 15, lines 17-37). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, Suzuki et al, and Panusopone et al references in front of him/her and the

general knowledge of motion estimations, would have had no difficulty in providing the same parity field predictions as taught by Panusopone et al for the virtual field picture within the combination of Iwamura, Bock et al, and Suzuki et al for the same well known MPEG compliant video processing purposes as claimed

10. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwamura and Bock et al as applied to claims 1, 3, 28, and 35 in the above, and further in view of Fung of record (5,909,224).

The combination of Iwamura and Bock et al discloses substantially the same method above, but does not particularly disclose wherein the second buffer is the only buffer for displaying the image in the display order as claimed in claim 33. However, Fung discloses and apparatus and method for managing a frame buffer for MPEG video decoding as shown in Figure 2, and teaches the conventional use of a dedicated display buffer (26 of Figure 2) that accepts I, P, and B frames from frame buffers 24 of Figure 2, and which display buffer 26 is the only buffer for displaying the images in the display order (see display order as shown under display buffer 26 of Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art, having the Iwamura, Bock et al, and Fung references in front of him/her and the general knowledge of display buffer memory systems, would have had no difficulty in providing the display buffer 26 of Figure 2 of Fung after the frame memories 27a-27c of the MPEG video decoder as shown in Figure 1 of Iwamura for the same well known use of a single display buffer for controlling/displaying the MPEG images purposes as claimed.

11. Regarding the applicant's arguments at pages 7-9 of the amendment filed May 10, 2005 concerning in general that "... Iwamura also did not disclose, or one cannot be taught by

Iwamura, that the apparatus has a parameter generator for generating a virtual picture parameters and the virtual picture parameter ... defined in the MPEG standard. *B1 and B2 of Figure 3E are true pictures encoded in a compressed picture sequence, but not virtual pictures as recited in Claim 1 ...", the Examiner respectfully disagrees. The applicant makes some reference to the claimed features as defined in the MPEG standard, and if this is the case then it is apparent that these limitations are considered prior art. It is nevertheless again submitted that *B1 and B2 of Iwamura may be represented as substantially the same if not the same first and second virtual pictures as claimed, since *B1 is obtained in a predetermined manner, and sent to a buffer for display and since B2 is obtained according to the predetermined manner, sent to the second buffer, and B2 is generated using a decoded picture pre-stored in the first buffer (see above paragraph (2)). Further, since Bock et al teaches the conventional use of null B frames which are neither coded or decoded to be provided in the video sequence (see column 4, lines 1-14), such null B frames may certainly be provided within the video sequence of Iwamura in order to handle missing/error B frames.

The applicant argued at page 9 of the amendment filed May 10, 2005 that Bock et al did not disclose video decoding and particularly video decoding by generating a virtual picture without decoding the compressed picture sequence. This argument pertaining to the newly amended features has already been address in the above paragraph (2).

Regarding the applicant's arguments at page 10 of the amendment filed May 10, 2005 concerning in general that there are two additional differences between the present invention and Bock et al, the Examiner wants to point out that: The Specification is not the measure of invention. Therefore, limitations contained therein can not be read into the claims for the

purpose of avoiding the prior art. In re Sporck, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968).

Regarding the applicant's arguments at page 10 of the amendment filed May 10, 2005 concerning in general that the null frames, zero valued motion vectors, and zero valued coded block patterns are in the compressed picture sequence within Bock et al is different from the feature as recited in claim 1, the Examiner respectfully disagrees for reasons as shown in the above paragraph (2).

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (571) 272-7333. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

7/22/05